Telepsychiatry in Integrated Care Settings

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The objective of this article is to inform psychiatrists and other mental health professionals and primary care providers about the role of telepsychiatry in facilitating integrated care models, particularly in remote primary care practices. A narrative literature review was conducted to highlight the evidence and challenges of using telepsychiatry for integrated care. Telepsychiatry uses communication technologies to facilitate audiovisual interaction between patients and care teams to deliver services and expertise across distances and practice settings. It is particularly suited for integrated care settings, if business model innovations such as collaborative care models are implemented alongside to improve the access and delivery of care to patients. Telepsychiatry has been shown to be equivalent to face-to-face evaluations and, in certain instances, may lead to better outcomes in integrated care settings. Several challenges of adopting telepsychiatry in real practice are highlighted, including reimbursement and licensing across states, which continue to be an important barrier. It is critical to use an established framework to understand the potential users of telepsychiatry and develop and promote competency-based telepsychiatry training for novice, competent, and expert users. Psychiatrists who want to extend their expertise to distant sites, improve access to care, and partake in the new business models of collaborative care will need to consider these benefits and challenges.

A significant proportion of patients with behavioral health disorders (mental illness and substance use disorders) in the United States are seen in primary care practices (1). This reliance is even greater in rural sites where capacity and access to behavioral health professionals, including psychiatrists, psychologists, and/or social workers, are significantly limited (2). Integrated care approaches have been developed to address this gap in the care of behavioral health patients seen in primary care practices (3, 4). The most evidence-based integrated care model, called *collaborative care* (5), was developed by Katon et al. (6, 7) and colleagues (8) by adapting Wagner's chronic care model (CCM) (9). At the core of the CCM is the implementation of organizational changes facilitated by the use of information and communication technology (ICT) to enhance the productive interactions between patients and care teams. Specifically, in collaborative care, the productive interactions occur between the patient and the care team consisting of a care manager (CM), primary care provider (PCP), and consulting psychiatrist and other key stakeholders.

The collaborative care approach of integrated care introduces two new roles (the CM and consulting psychiatrist) that involve interacting with patients and staff in primary care practices. The PCP remains the central care provider, but he or she is supported by the CM, who coordinates care and manages a population of patients by using a disease registry. The CM (who may be a nurse, social worker or medical assistant) develops a relationship with the patient, conducts a proactive follow-up outside of regular office visits, and uses evidence-based techniques such as motivational

interviewing and behavior activation to enhance patient wellness. The CM connects the patient to other relevant mental health and social services and obtains regular supervision from the consulting psychiatrist. The supervision sessions usually occur weekly, and any medication suggestions are passed on to the PCP, who remains the prescriber. For patients who are not improving, a stepped-care approach is taken to optimize treatment. This stepped-care approach may require having a one-on-one patient evaluation with a psychiatrist as deemed necessary. Outside of this scenario, the consulting psychiatrist would not typically have individual consultations with patients on the CM panel. This psychiatrist's role of managing a population of patients at once departs from the usual interaction between psychiatrists and primary care where patients are referred to the psychiatrists for a one-on-one consultation.

In collaborative care trials and real-life implementation, the principal ICT tools that have promoted productive interactions between patients and care teams have included eHealth tools, such as disease registries (10) and electronic health records (EHRs), and videoconferencing communicating technology, called *telepsychiatry* (11, 12). Disease registries enable the systematic collection and monitoring of population outcomes by care teams to facilitate evidence-based treatments for patients and caseload supervision for CMs by psychiatrists. The clinical documentation within EHRs for specific patients enables education and coaching of PCPs on management of behavioral health conditions. Additionally, EHRs typically have embedded inbox messaging technology that facilitates communication between patients

and their care teams on specific issues (13). Telepsychiatry promotes as-needed virtual direct patient consultation by psychiatrists in keeping with the stepped-care approach within integrated care. Psychologists and social workers can also provide evidence-based psychological therapies via telepsychiatry to patients at distant sites. Together, these ICT tools facilitate care that is team driven, population focused, evidence based, and measurement guided (14).

Telepsychiatry is one of many options on a spectrum of technology that can be used to engage patients with behavioral health conditions. Psychiatrists need to develop competencies in delivering telepsychiatry, given that Web-based services are becoming more popular with patients (15). This article focuses on informing psychiatrists, other mental health professionals, and PCPs about the role of telepsychiatry in delivering services and expertise across distances and practice settings, regardless of the model, but with integrated care as a great example. In this article, telepsychiatry includes psychiatric consultation and the delivery of psychological therapies by trained licensed professionals, including psychologists, counselors, and social workers. The article starts by defining telepsychiatry and elaborating on its integration with other ICT tools for collaborative care delivery. The evidence comparing telepsychiatry with face-to-face evaluation and its use for integrated care are discussed. This article describes the roles of team members and the benefits of using telepsychiatry to enhance integrated care. It concludes by discussing practical challenges associated with implementing telepsychiatry for integrated care and some probable solutions. Overall, this article promotes the use of telepsychiatry in integrated care to achieve the triple aim (16) of improving population health, improving the patient experience, and lowering the costs of behavioral health disorders.

WHAT IS TELEPSYCHIATRY?

Concepts and Tools

Telepsychiatry is the practice of delivering psychiatric care using communications technology (17). The remote linkage between health care providers and patients enables the productive interaction for clinical assessment, diagnosis, medication management, and therapy (18). Additionally, telepsychiatry can be used to facilitate continuing medical education for health care providers in distant sites (19), as demonstrated in Project ECHO (20). There have been various advances in communication technologies that have made telepsychiatry a promising tool for providing care to underserved populations. The most predominant communication technology used in telepsychiatry is videoconferencing, which enables audiovisual transmission via a wide array of services, including Internet, wireless, satellite, and telephone services. There are various technological tools that enable telepsychiatry, including the hardware-based videoconferencing system, personal computer, videophone, and mobile or smartphone (21). A number of

technical factors are taken into account when considering the quality of the experience of telepsychiatry, including the connection speed (bandwidth), frame rate, and image quality of the equipment used (21). The equipment must adhere to the compliance criteria of the Health Insurance Portability and Accountability Act to ensure the security and privacy of patient data.

Integration With Other Technologies

For telepsychiatry to be successful and patient-centered, platforms that integrate telemedicine data into EHR systems will be valuable (22). A seamless EHR allows practicing from a distance to be less taxing, as it enables administrative support in record maintenance and the coordination of schedules and clinical workflow such as electronic prescriptions. EHRs enable psychiatrists and PCPs to have access to pertinent patient information that is essential for maximizing collaboration for optimal care management. Shared EHRs also allow collaborating providers to send inbox messaging and for patients to interact with their care team via secure patient portals within an integrated health system (23, 24). That said, the interoperability between disparate EHRs in large health care organizations and small rural practices is critical for the efficient integration of telepsychiatry. The U.S. Department of Veterans Affairs (VA) Computerized Patient Record System is an example of how this is done in a large integrated health network (25). With the Affordable Care Act (26), medical practices are being incentivized to improve patient care by integrating EHRs into their workflow (27). For sites where interoperable EHRs do not exist, the availability of Web-based disease registries cannot be overstated, as it allows providers across different sites to view the same information about the patients they are seeing (10, 28).

Types of Delivery

The two main types of telepsychiatry services described in the literature are real-time or synchronous telepsychiatry and store-and-forward or asynchronous telepsychiatry (29). Synchronous telepsychiatry involves a live two-way interactive video to a remote site between the psychiatrist and the patient (either alone, with the PCP, or more commonly with the CM). Yellowlees et al. noted that asynchronous telepsychiatry includes a process in which the PCP initiates a referral and a video-recorded structured interview is conducted and transmitted together with patient's medical records via a secure Web site for a psychiatrist to evaluate and then write up a diagnostic assessment and treatment plan (30). Asynchronous psychiatry has been shown to be useful in providing services to culturally diverse groups (31).

Audiovisual Versus Face-to-Face Assessment

Several studies have evaluated the comparison between telepsychiatry and face-to-face assessments of patients with behavioral health conditions. Ruskin et al. conducted a randomized controlled trial in which the medication management

of patients with depression who were treated remotely by telepsychiatry was compared with that of patients treated in person over a 6-month period (32). The results showed comparable improved depression outcomes and equivalent levels of patient adherence, patient satisfaction, and health care cost. Similar results were found in a study in Canada; however, in this setting, the cost of telepsychiatry was less expensive per patient (33). A meta-analysis of 14 studies comparing telepsychiatry and face-to-face assessments suggested that there is no difference in diagnostic accuracy or satisfaction between the two modalities (34).

RATIONALE FOR USING TELEPSYCHIATRY AND eHEALTH TOOLS FOR INTEGRATED CARE

Improving Geographical Access to Integrated Care
In keeping with the principles of the CCM, integrated care relies heavily on the proactive interaction between patients and various members of the health care team. However, this proactive interaction depends largely on the ability of patients to access relevant providers involved in the delivery of integrated care. Rural practices may not be able to secure the services of colocating mental health specialists. Additionally, mental health specialists may not want to live in rural areas, further limiting the access to their skill set. The use of telepsychiatry can solve some of the challenges associated with access, particularly in rural areas but also in urban areas. Access in the 21st century has been defined "as the potential ease of having virtual or face-to-face interactions with a broad array of healthcare providers including clinicians, caregivers, peers, and computer applications" (35, p. 641). Telepsychiatry can bridge geographical divides, thus reducing the cost and time associated with transportation to distant sites. Additionally, it enables the provision of culturally diverse care to patients in their own locale with familiar providers.

Increasing Capacity in the Face of a Mental Health Workforce Shortage
Given that integrated care models focus on "leveraging" psychiatrists' time through effective consulting rather than delivering treatment, telepsychiatry has the potential to address the capacity challenges associated with a specialist mental health workforce shortage. Effective consulting utilizes skills such as curbside consultation with PCPs, caseload supervision of CMs, and case-based coaching of PCPs. This allows the telepsychiatrist to reserve virtual direct consultation to patients who have not shown improvement in keeping with stepped-care approaches to treat to target concepts. If required, a face-to-face evaluation can also be arranged by referral to the specialist mental health system. By being strategic about the use of limited specialist resources, primary care practices supported by distant telepsychiatrists can increase the capacity of PCPs to deliver care to a population of patients with behavioral health disorders.

Supporting the Main Components of Integrated Care
The role of the CM is unique and critical to engaging patients with behavioral health conditions seen in primary care, and it has been identified from meta-analysis (5) as one of the main components of the collaborative care model of integrated care. The CM is responsible for the coordination of care with the patient, and he or she utilizes several eHealth tools to achieve this task, including disease registries, telephone, text messaging, patient portals, and e-mails. For example, an off-site CM can collect measurement-based clinical outcome metrics, such as results from the Seven-Item Generalized Anxiety Disorder Scale (GAD-7) or the Patient Health Questionnaire–9 (PHQ-9), over the telephone from the patient and enter the results into a disease registry, sometimes embedded within EHRs. From a population perspective, the CM and consulting psychiatrist can then routinely review the disease registry containing the caseload of patients to identify those who are not doing well. The necessary adjustments are made by the psychiatrist and communicated to the CM and PCP. This exercise has also been tagged as central to the effectiveness of collaborative care. For patients who do not improve, a telepsychiatry assessment can then be undertaken between the consulting psychiatrist and patient. Additionally, specialized psychological therapies can be delivered through this modality.

EVIDENCE FOR TELEPSYCHIATRY USE IN INTEGRATED CARE

Telepsychiatry-Enhanced Collaborative Care Versus Usual Primary Care
There is good evidence for using telepsychiatry to facilitate integrated care. Is telepsychiatry-enhanced collaborative care better than usual primary care practice for patients with depression? In one study, a randomized trial of telepsychiatry-based collaborative care for depression was adapted for small VA community-based outpatient clinics with no on-site psychiatrists, but access to telepsychiatrists was compared with usual care (12). Results indicated that patients receiving the intervention were more likely to be medication adherent, to respond, and to remit to depression treatment. Intervention recipients reported larger gains in mental health status and health-related quality of life, and they reported higher treatment satisfaction. However, although the intervention was beneficial and did not increase total workload for PCPs or mental health providers (36), it was noted to be expensive in its delivery at rural sites (37).

Practice-Based Versus Telemedicine-Based Collaborative Care
Does an off-site telepsychiatry-enhanced collaborative care team deliver similar or better care in comparison with an on-site collaborative care team? Fortney et al. conducted a pragmatic randomized comparative effectiveness trial comparing practice-based with telemedicine-based collaborative care for depression in rural federally qualified health

centers (38). In this study, telemedicine-based collaborative care virtually collocated and integrated mental health providers into primary care settings. The patients assigned to telemedicine-based collaborative care received evidence-based care from an on-site PCP and an off-site team consisting of a nurse CM, a pharmacist by telephone, and a psychologist and a psychiatrist via videoconferencing. Patients who were assigned to practice-based collaborative care received evidence-based care from an on-site PCP and a nurse CM. The results showed greater reductions in the severity of depression over time in the telemedicine group, compared with the practice group. The improved outcomes were attributed to better fidelity to care management protocols in the telemedicine group. Subsequent analyses suggested that off-site telepsychiatry collaborative care was more cost effective than on-site practice-based collaborative care interventions and that rural practices may find it more valuable and cost effective if they outsource collaborative care support to distant off-site teams (39).

Virtual Delivery of Evidence-Based Psychotherapy

Can telepsychology be used effectively in telemedicine-based collaborative care? A randomized controlled trial of telemedicine-based collaborative care for posttraumatic stress disorder (PTSD) by Fortney et al. studied patients recruited from 11 VA community-based outpatient clinics serving predominantly rural veterans (40). Off-site PTSD care teams located at VA medical centers supported on-site community-based outpatient clinic providers. Off-site PTSD care teams included telephone nurse CMs, telephone pharmacists, telepsychologists, and telepsychiatrists. The nurses conducted care management activities, the pharmacists reviewed medication histories, and psychologists delivered cognitive-processing therapy (CPT) via interactive video. Psychiatrists supervised the team and conducted interactive video psychiatric consultations. The statistically significant results indicated that patients enrolled in the intervention group were more likely to receive evidence-based CPT and to experience larger decreases in PTSD severity. Attendance at eight or more sessions of CPT significantly predicted improvement in Posttraumatic Diagnostic Scale scores and fully mediated the intervention effect (41).

IMPLEMENTATION OF TELEPSYCHIATRY-ENHANCED INTEGRATED CARE

Tailoring Telepsychiatry to Innovative Business Models

Although the concept of telepsychiatry has been around since the 1950s (42), its adoption for routine use has been hampered by a number of factors and has not kept up with the pace of technological innovation or the consumption of new technology. When telepsychiatry has been implemented, it has served primarily to sustain existing practices rather than disrupt the status quo. Hwang and Christensen (43) have differentiated between the use of technological

advances to sustain versus disrupt health care, suggesting that the latter is critical to achieving improved access to care that can be delivered at a lower cost to more people. They indicated that, for true disruption to take place in health care, technological innovation must be paired with business practice innovation. Integrated care, in the form of the collaborative care model, is a disruptive business practice innovation that is ripe for technological tools such as telepsychiatry.

Katzelnick and Williams (44) identified a series of six successful attempts to implement collaborative care into primary care practices, such as the DIAMOND (Depression Improvement Across Minnesota Offering a New Direction), COMPASS (Care of Mental, Physical, and Substance-Use Syndrome), and PC-MHI (Primary Care–Mental Health Integration) programs. They paid particular attention to the science of dissemination and the use of established change management techniques, such as continuous quality improvement, PDSA (Plan-Do-Study-Act) cycles, and Six Sigma to facilitate adoption. In their article, Fortney and colleagues describe in detail 14 critical steps that are required to implement and maintain fidelity to the collaborative care model in the VA (45). The first step required the identification of target clinics, local champions, or opinion leaders and other stakeholders who have buy-in to the model and collaboration with an outside expert who has knowledge of collaborative care and its implementation. The subsequent steps include identifying patients who would be suitable to the model; detailing the roles of care team members; collecting quality improvement data; and piloting, evaluating, and revising clinical protocols.

Licensing and Reimbursement Barriers

The role of the consulting psychiatrist is where telepsychiatry is most relevant in the implementation of the collaborative care model in remote primary care practices. In keeping with stepped care for treatment intensification, the consulting psychiatrist provides direct virtual consultation through telepsychiatry for difficult cases identified by the CM. However, as detailed in a recent report to the U.S. Department of Health and Human Services, certain barriers to the use of telemedicine for integrated care exist, including reimbursement, licensure, credentialing and privileging, and broadband connectivity (46). Within the private sector, large integrated health systems such as the Carolinas HealthCare System have the organizational context critical to enabling the use of telepsychiatry to facilitate integrated care. However, licensure of physicians is a barrier to the efficient and widespread use of telepsychiatry within these organizations. Most states' medical boards require physicians to be licensed in both the state of their practice and the state where the patient is located. The VA is not susceptible to these challenges, as physicians who work within the integrated system are salaried, allowing focus on quality rather than quantity of services. Also, physicians only need to hold an unrestricted license in one state to provide telemedicine services within

the VA health system across the United States. The VA health system also has an interoperable EHR system, with integrated telehealth technologies across its sites making it highly suitable for implementation of the collaborative care model (25).

Reimbursement Reform

Reimbursement reform by both public and private insurance is required to make telepsychiatry routinely available to remote primary care practices that are not part of an integrated health care system. Medicare's fee-for-service program limits the use of telepsychiatry services to rural health professional shortage areas and requires that the patient be located in practices located outside of a metropolitan statistical area. Transitioning from fee-for-service models may be more relevant to using telepsychiatry in the collaborative care model. For example, under the Merit-Based Incentive Payment System of the Medicare Access and Children's Health Insurance Program Reauthorization Act, Medicare now rewards physicians financially for using telemedicine technologies, such as telepsychiatry, to facilitate care coordination activities such as those seen in collaborative care. Additionally, if the physician qualifies for the alternative payment model, the location of the patient or physician does not matter for reimbursement of telehealth services.

Adoption Issues

Unfortunately, despite the potential benefits of telepsychiatry, it has not been adopted into routine medical practice as would have been expected (47). Rogers' diffusion of innovation (48) theory has been applied to various technological implementation and is relevant to telepsychiatry adoption. The theory focuses on the qualities that enable an innovation to be replicated and on understanding the needs of different user segments.

Qualities that may spread the use of telepsychiatry. To what degree is telepsychiatry perceived to provide a significant relative advantage to usual practice by end users such as psychiatrists, patients, and PCPs? This relative advantage could be in areas such as satisfaction, convenience, and access to care and would be different for various end users. The greater the perception of relative advantage, the more likely that telepsychiatry will be adopted. Is telepsychiatry perceived to be compatible with existing values and practices? If the scheduling and rooming of patients for telepsychiatry encounters are not perceived to fit into existing clinical workflow patterns, this may negatively affect the adoption of telepsychiatry. Is telepsychiatry perceived to be simple and easy to use? If telepsychiatry is perceived to be difficult to use, its adoption would be limited in busy integrated care settings. Is it easy for psychiatrists to experiment with telepsychiatry and observe positive results? An innovation that can be tested in clinical trials may feel less risky to users, and observable positive results may motivate adoption. However, the upfront investment in technology and

effort required to overcome licensing and reimbursement barriers can make conduct of trials difficult. It is important to incorporate the views of end users on these dimensions during the development of telepsychiatry.

Understanding the needs of different user segments. Rogers' diffusion of innovation theory also divides the categories of adopters into *innovators*, *early adopters*, *early majority*, *late majority*, and *laggards* based on the likelihood of adopting an innovation. Innovators of telepsychiatry are enthusiastic about the technology and spend a great deal of time and commitment in promoting its use. They are an important partner in telepsychiatry project implementation. Early adopters are a segment of practitioners who typically "jump in" when some benefits become known, and they like to be trendsetters. They are vital for spreading telepsychiatry within health care practices, because their perception and communication can determine the rate of adoption. They can also help in suggesting refinements to telepsychiatry programs.

If telepsychiatry survives the initial barriers of implementation within a health care practice, the next groups of individuals who need to be won over are called the early majority. They tend to require some evidence that telepsychiatry demonstrates improved patient outcomes, meets appropriate standards such as protection of patient privacy, and appropriately addresses questions about legal dimensions. It is important that the early majority have sufficient support available to facilitate the implementation of telepsychiatry. The late majority are typically conservative and will usually be uncomfortable with trying telepsychiatry. It is important to provide answers to their fears about using the technology while cautiously forewarning the risk of being left behind. Laggards tend to challenge the use of telepsychiatry and highlight all the potential negatives with using the technology. In the latter stages of implementation, it is important to liaise with them to maximize their exposure to telepsychiatry and, hopefully, make them comfortable. Targeting individuals who are recognized as opinion leaders is central to facilitating peer-to-peer conversations about telepsychiatry's value and benefits.

It is critical to develop and promote competency-based telepsychiatry training for novice, competent, and expert levels (49) to help standardize knowledge across the various user groups mentioned earlier. Some of the competencies include gaining appropriate technical skills, adapting clinical assessment and communication skills to the online environment, obtaining knowledge about the medicolegal practices associated with this type of practice, improving the ability to collaborate with multidisciplinary teams through this medium, and being a manager and advocate for using this technology to improve access to care with new business models (50). This training can start during residency, because earlier exposure may dispel myths surrounding the practice of telepsychiatry.

CONCLUSIONS

Telepsychiatry uses communication technologies to facilitate audiovisual interaction between patients and care teams at distant sites. It is particularly suited for integrated care settings, if business model innovations such as collaborative care models are implemented alongside to improve the access and delivery of care to patients. Telepsychiatry has been shown to be equivalent to face-to-face evaluations and, in certain instances, may also lead to better outcomes. Reimbursement and licensing across states continue to be important barriers that require legislative efforts for telepsychiatry to become mainstream. Additionally, active implementation strategies may be required to facilitate the adoption of telepsychiatry into real-world settings.

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